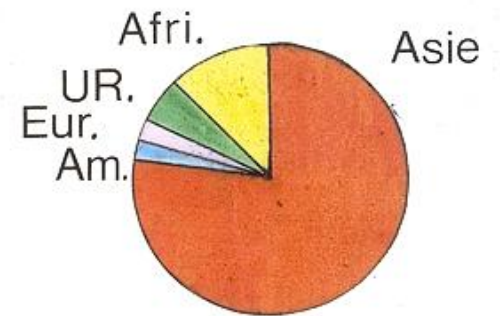
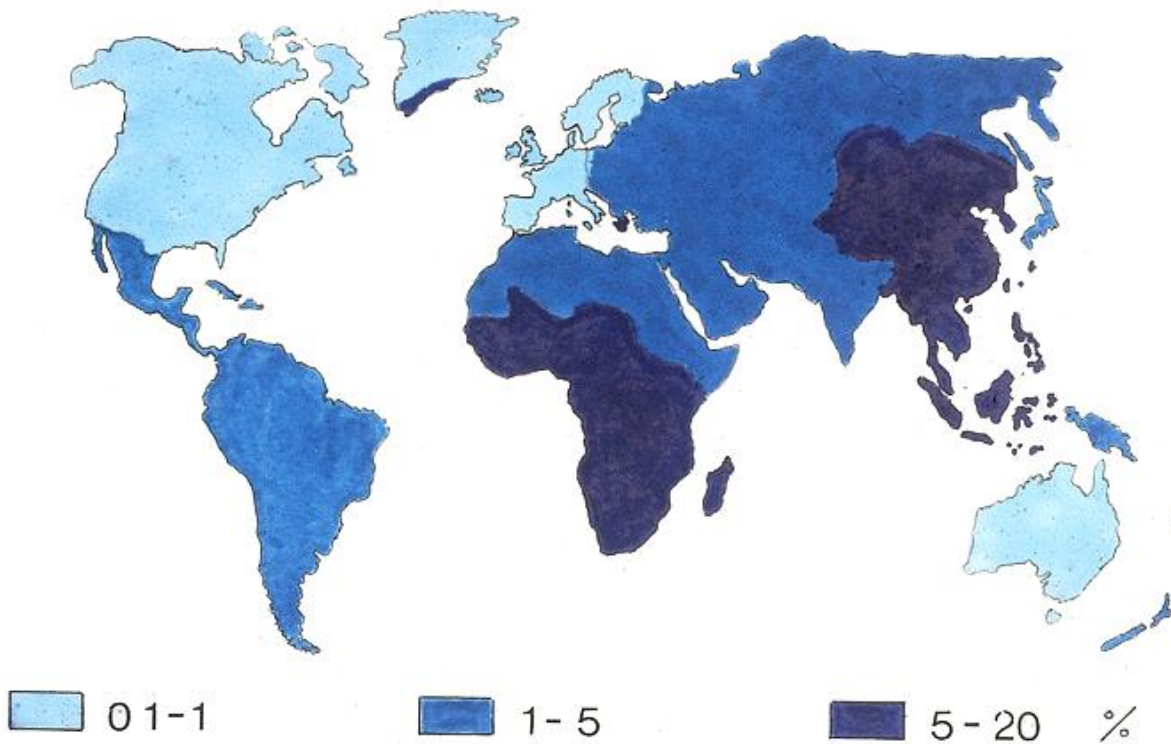


# The Hepatitis B Virus from Cloning to Vaccine

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Pierre Tiollais

Professeur Emérite à l'institut Pasteur



The 200 000 000  
Chronic Carriers

Hepatitis B surface Antigen Prevalence

# VIRAL HEPATITIS B

non endemic areas

ADULTS

HBV INFECTION

INFANTS

endemic areas

80% inapparent disease

20% acute hepatitis

0.1% fulminant hepatitis

95% Recovery

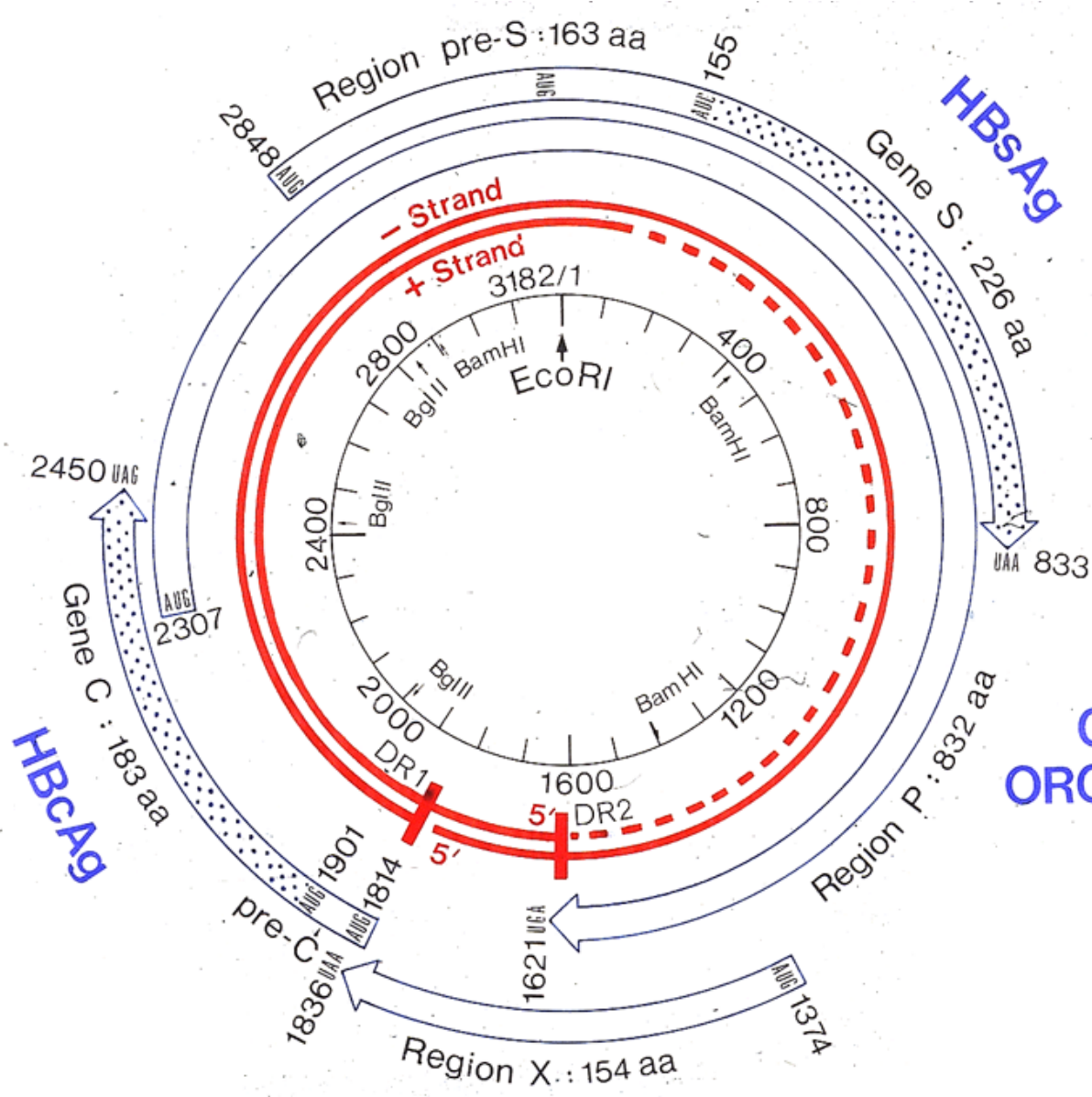
5% chronicity

Cirrhosis  
Liver cancer

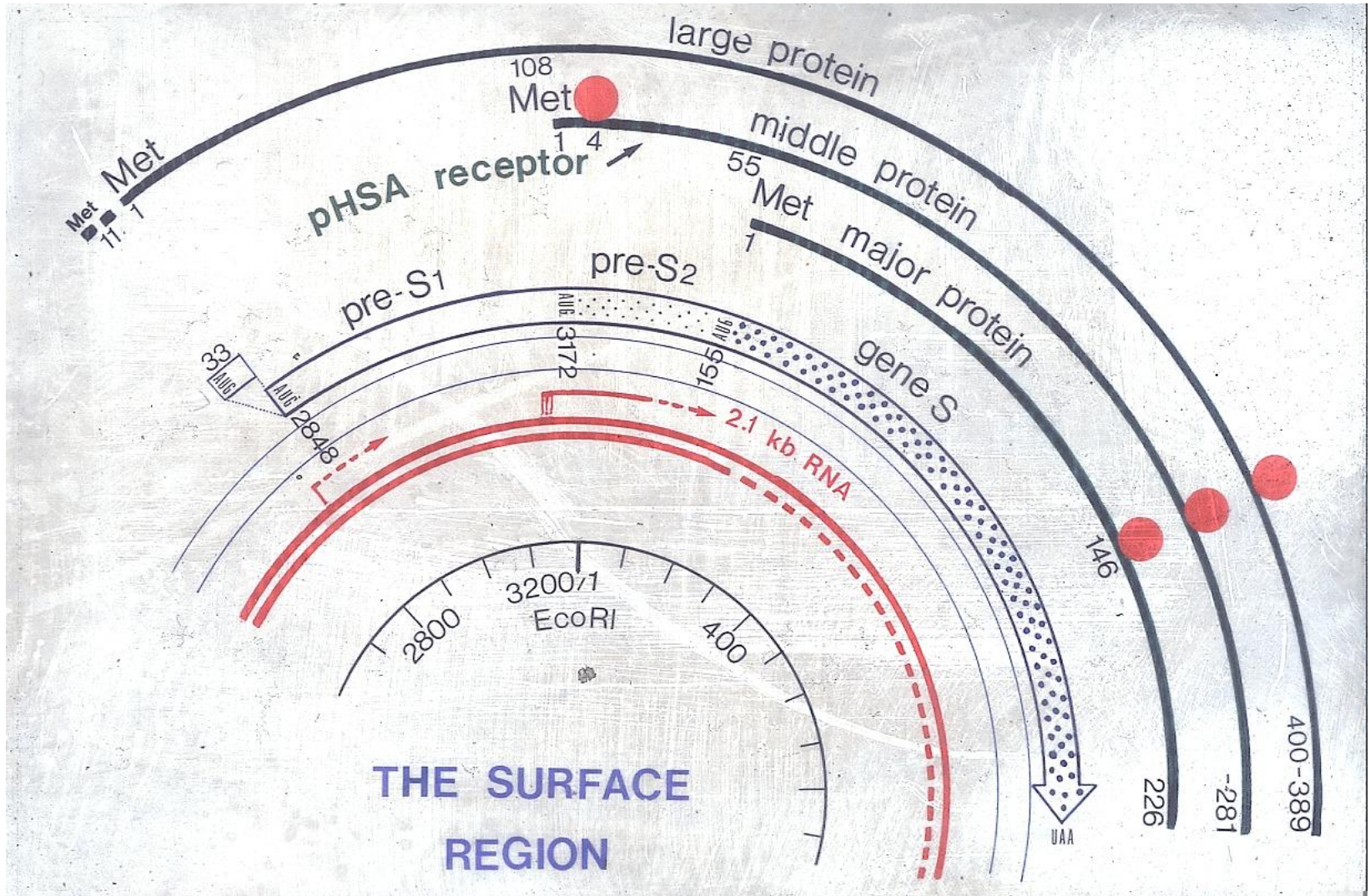
inapparent disease

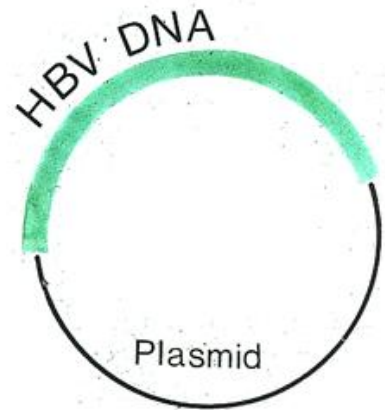
80-95% chronicity





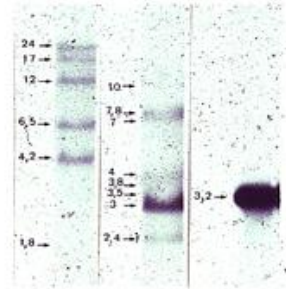
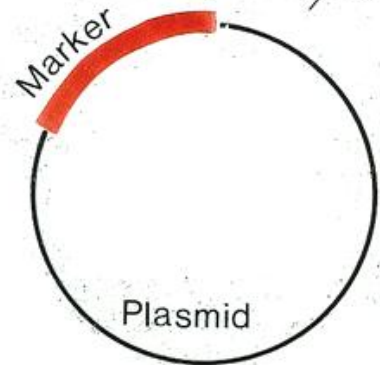
**THE  
GENETIC  
ORGANIZATION**



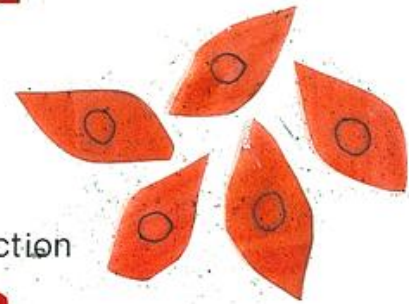


Cell Cotransfection

$1/10^5 - 10^6$



Selection



Screening

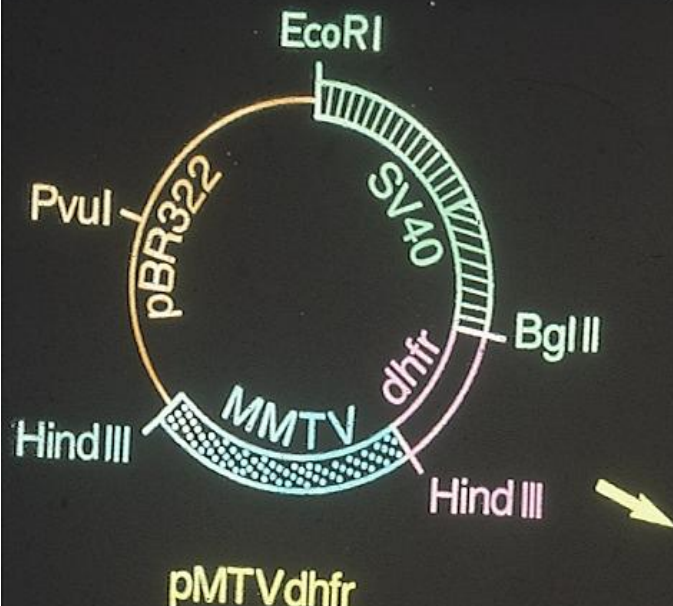


HBsAg R.I.A.

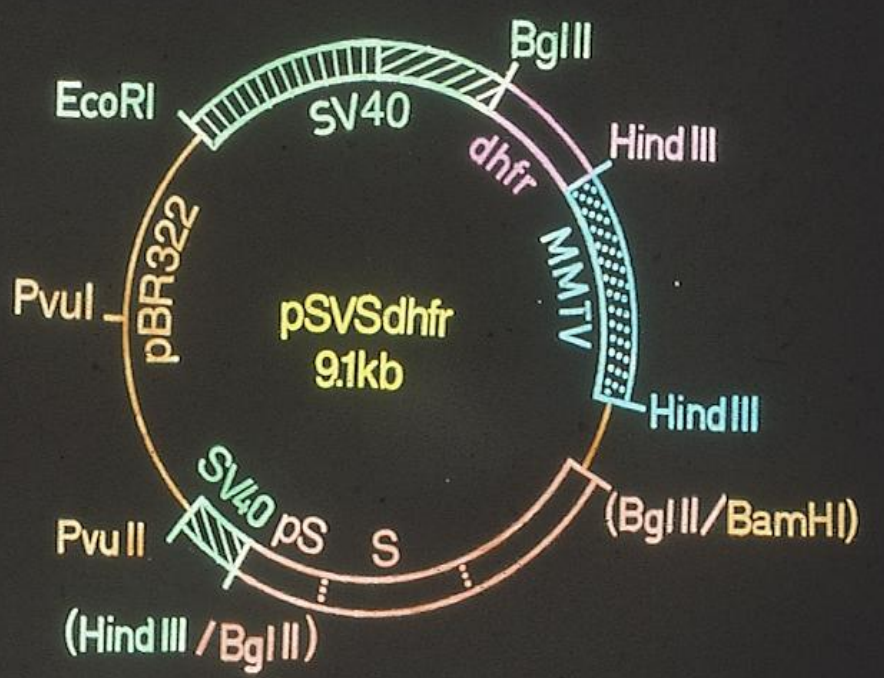


# HBV GENE EXPRESSION IN CELL CULTURE

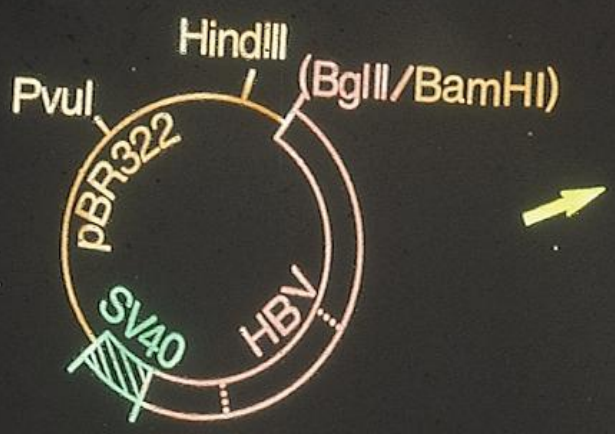




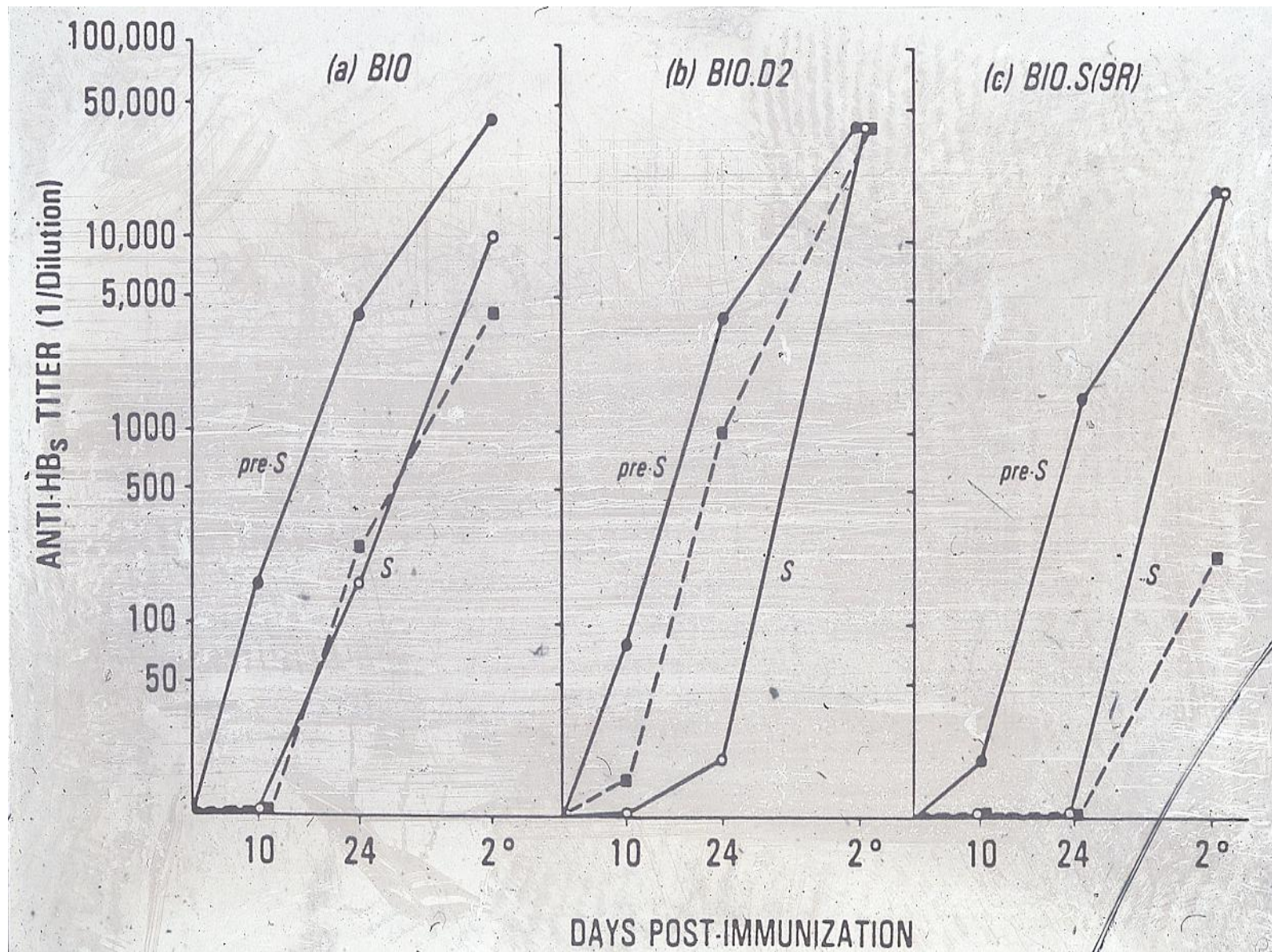
pMTVdhfr



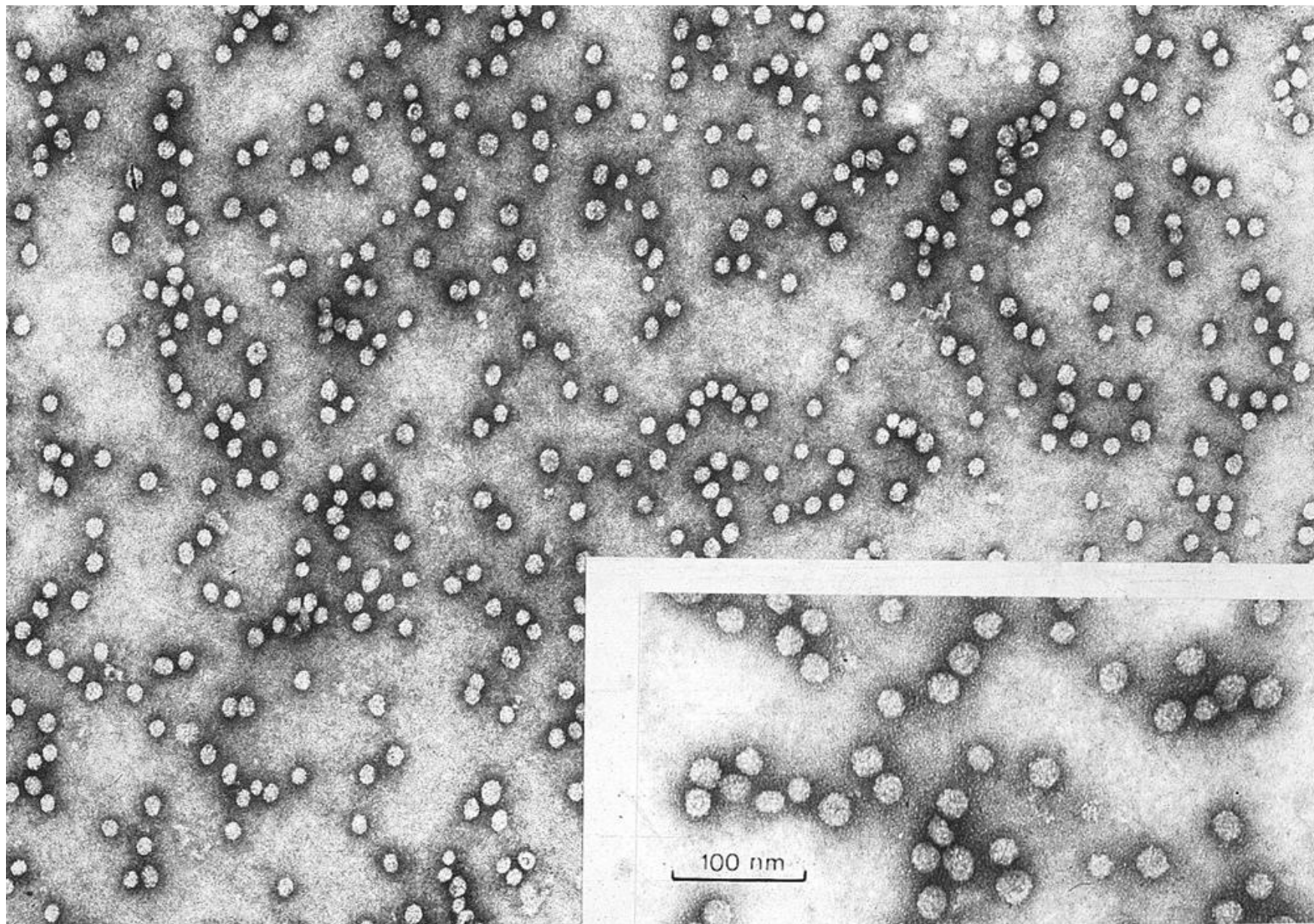
pSVSdhfr  
9.1kb



pSVS

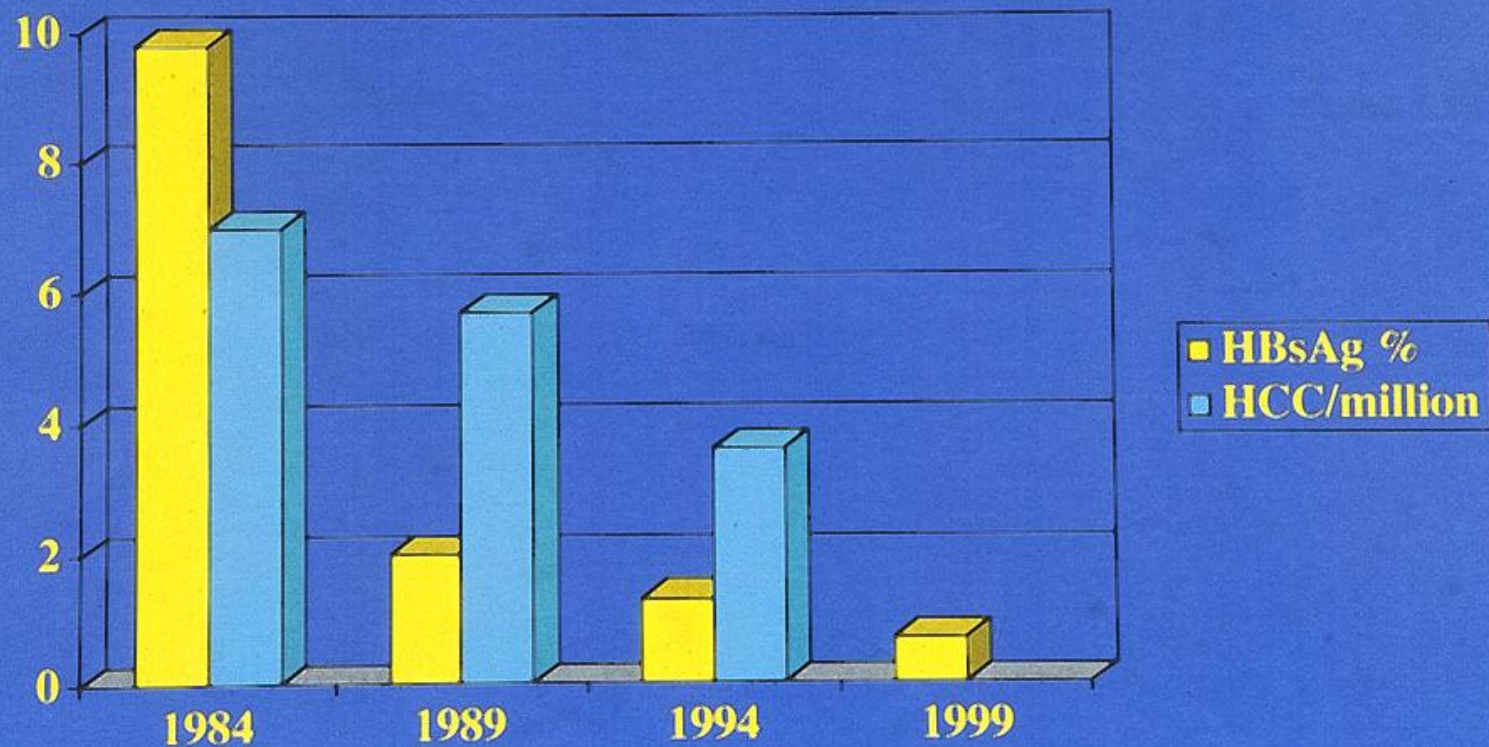






# Hepatitis B vaccine : the first anti-cancer vaccine

## AgHBs and HCC prevalence in <12 year-old children in Taiwan



*Chang, MH, NEJM, 1997. Lin YC, JID, 2003*



# **Vaccinotherapy in HBV chronic hepatitis**

## **Perspectives**

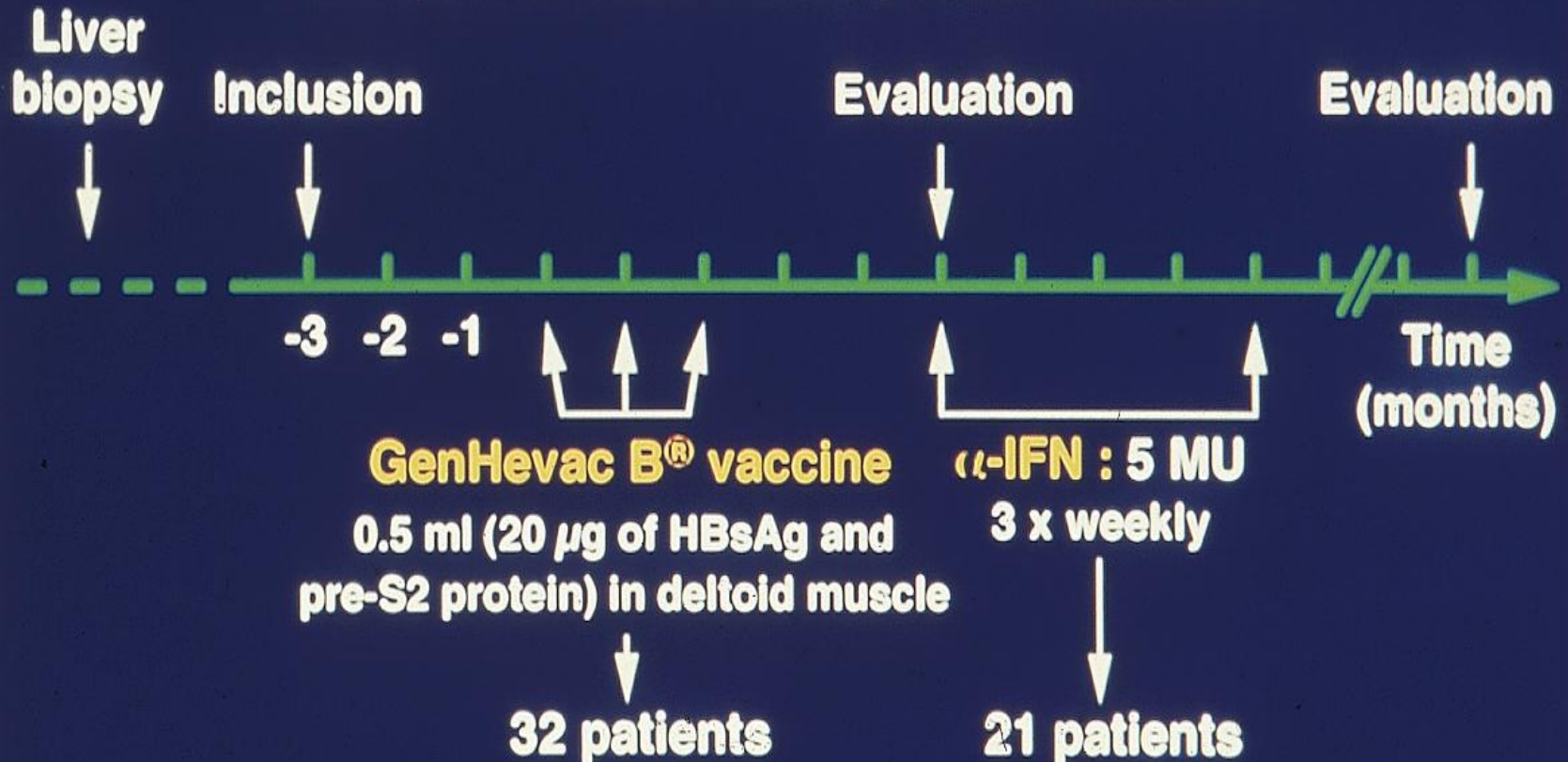
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- **Similar efficacy of anti-HBV vaccination and antiviral therapy ?**
- **Additional efficacy of anti-HBV vaccination and IFN $\alpha$  ?**

# Vaccinotherapy in HBV chronic hepatitis

## Therapeutic Protocol

HBeAg, HBV DNA and transaminase activities were performed monthly after inclusion.





# Vaccinotherapy in HBV chronic hepatitis

## Results

**HBV DNA  
(pg/ml)**

**Patient n°3 : Responder**

